REMARKS

Applicant's undersigned attorney initially thanks Examiner Burch for the courtesies extended during the telephone interview on March 13, 2006 and confirms that the Interview Summary mailed on March 31, 2006 accurately reflects the substance of the interview of March 13, 2006.

Claims 1 through 32 have been cancelled without prejudice or disclaimer.

Claims 33 through 50 are presented herein and are pending in this application.

A DECLARATION by J.A. Puckett, Ph.D., P.E., V.O. Smith Professor and Head, Department of Civil Engineering, Department of Civil and Architectural Engineering, College of Engineering, University of Wyoming is provided herewith as evidenced and includes Dr. Puckett's impressive resume reflecting his unquestioned expertise in the fields of static and moveable structures, vibration damping and balancing of rotating structures.

Attention is initially invited to Paragraph 3 of Dr. Puckett's DECLARATION which provides an accurate indication of the ordinary and accustomed meaning of words and phrases employed herein and in this application and reflects the meanings to be given such words and phrases in this document and this application and the prior art as follows:

(a) Pole – A vertical fixedly positioned non-rotatable elongated structure supported and held in position in a cantilever manner at its lower end. Light poles and flag poles are typical examples.

(b) Vertical – In the direction of earth gravitational force, radial toward the center of the earth and generally orthogonal to the earth surface.

(c) Horizontal – A plane orthogonal to vertical.

(d) Wind Induced Pole Vibration – Multi-directional sequential displacement of the upper portion of th pole from its equilibrium position wherein the displacement frequency is comparable to the natural frequency of the pole typically due from wind gusts, shedding of vortices and/or galloping applied independently or in combination.

(e) Damping – The process of dissipation of energy in a vibrating system or structure such as the reduction of vibration resultant from a first external force applied to a body by the application of a second external force to the body countering the energy in the body resultant from the first external force.

(f) Out of Balance Force – A force due to the rotation of a mass that has its center of gravity eccentric to the axis of rotation. Typically, out of balanced forces are undesired in rotational systems. An out of balance automobile wheel and tire assembly, the rotating washing machine tub 18 in Tatsumi *et al.* and the rotating shaft 32 in Hannah *et al.* are examples of devices generating such force.

(g) Balancing – A repositioning of the center of gravity of an eccentric mass rotating about a rotational axis such that the eccentricity that creates the out of balance force is reduced.

(h) Inertial Force – A force or moment due to a force that is created due to the acceleration of mass.

(i) External Force – A force that is due to non inertial effect and externally applied. Wind is an example.

(j) Viscous Damping – A dissipation of energy by a velocity dependent mechanism. An example is an automobile shock absorber.

(k) Coulomb (or Friction) Damping – A dissipation of energy by a friction dependent mechanism. An example is an automobile brake.

(l) Hysteretic Damping – A dissipation of energy by an inelastically deforming material mechanism. An example is a plastic hinge in a structural system.

(m) Impact Damping – A dissipation of energy due to the impact of two or more bodies. An example is a dropped ball that looses energy with each floor impact.

(n) Rolling Friction Damping – A dissipation of energy by one body rolling over another. This process is related to Coulomb damping.

THE SUBJECT INVENTION

The subject invention is directed to vibration damping apparatus 20 for damping wind induced vibrations. Vibration damping apparatus 20 has a housing enclosing rollable weights and which is attachable to a conventional vertical pole P such as a light pole or flag pole so that weight movement and impact with the housing dissipates wind induced energy in the pole by a combination of rolling friction and impact damping *(Puckett Declaration, paragraph 5)*. Such first harmonic mode pole vibrations occur in response to external force (wind) engaging the pole and are consequently fundamentally different from the internally generated rotation created forces of unbalanced rotating shafts or the like that are unbalanced due to their center of gravity being spaced from their axis of rotation, such as disclosed in the non-analogous balancing devices of Hannah *et al.* U.S. Patent No. 5,724,862 and Tatsumi *et al.* U.S. Patent No. 4,433,592, both of which are non-analogous fields to the damping field of the application *(Puckett Declaration, paragraphs 6 and 7)*.

The subject damping apparatus employs two identical main housing components comprising a first horizontal housing component half-portion 22 and a second horizontal housing component half-portion 24 which are connected together by threaded screws 60. The horizontal half-portions 22 and 24 respectively include inner partial cylinder sleeve surfaces 26 and 26′ which facingly contact and engage the outer surface of a vertical pole as shown in Figure 1 so that adjustment of threaded screws 60 clamps the entire device to the pole in a secure manner. Horizontal half-portions 22 and 24 each include partitioning

panels extending vertically upward from horizontal floor panels 50 and 50′ and are respectively connected at opposite ends to an inner partial cylinder sleeve 26, 26′ and an outer partial cylinder sleeve 34, 34′ so as to define non-circular damping weight receiving chambers 48. A single spherical metal weight formed of lead or other metals is positioned in each weight receiving chamber and may selectively be provided with a protective plastic cover such as polyurethane. The inertia of each metal weight causes it to tend to remain stationary during movement of the damping apparatus housing until it is engaged by the weight chamber walls to dissipate wind induced energy in the pole by a combination of rolling friction and impact damping *(Puckett Declaration, paragraph 5)*.

THE PRIOR ART

Hannah *et al.* U.S. Patent No. 5,724,862 is directed to "a balancing apparatus to remove imbalance in a rotating body" (Column 3, lines 45 and 46), which is non-analogous art to the ***damping art*** of the present invention and is not even remotely concerned with, or capable of, ***damping*** wind induced vibrations of a pole *(Puckett Declaration, paragraph 6 and 11)*. Damping and balancing are two entirely different and non-analogous operations that employ different procedures for alleviating different problems *(Puckett Declaration, paragraph 4)*.

More specifically, ***damping*** consists of the process of dissipation of energy in a vibrating system or structure such as the reduction of vibration resultant from a first external force applied to a body by the application of a second external force to the body countering the energy in the body resultant from the first external force *(Puckett Declaration, paragraph 3(e)*.

On the other hand, ***balancing*** consists of repositioning of the center of gravity of an eccentric mass rotating about a rotational axis such that the eccentricity that creates the out of balance force is reduced *(Puckett Declaration, paragraph 3(g)*. Hannah *et al.* discloses a variety of shaft balancing embodiments all of which are for reducing imbalance of ***horizontal rotating shaft 32.*** Hannah *et al.* does not provide, and is not capable of, damping of shaft 32 of Hannah *et al. (Puckett Declaration, paragraph 6)*.

Figure 8A of Hannah *et al.* discloses a plurality of 360° annular vertically extending circular guide ways, in each of which, a plurality of unnumbered spherical ball weights congregate in the same manner as balls 62 as illustrated in Figure 3 of Tatsumi *et al. (Puckett Declaration, paragraph 9)*. The movement of the Hannah *et al.* ball weights is restricted to circular movement in a ***vertical plane*** along their respective annular circular guide ways *(Puckett Declaration, paragraph 12)*. The Hannah *et al.* balancing apparatus does not, and cannot, effect damping of a pole *(Puckett Declaration, paragraph 6)*.

An essential feature of the Hannah *et al.* Figure 8A device that is required for it to perform its balancing function is the positioning of balls in vertically extending 360° circular guide ways illustrated in dashed lines so that the balls are freely movable along the 360° extent of the guide ways to permit the balls to congregate in contact with each other in essentially the same manner as balls 62 as illustrated in Figure 3 of Tatsumi *et al.* to effect balancing of horizontal unbalanced shaft 32 *(Puckett Declaration, paragraph 12)*. Preventing the 360° free movement of the balls such as by positioning of fixed panels such as panels 64 of Tatsumi *et al.* in the Hannah *et al.* guide ways would prevent Hannah *et al.* from effecting its intended function and purpose of balancing shaft 32 *(Puckett Declaration, paragraph 13)*.

The Tatsumi *et al.* U.S. Patent No. 4,433,592 is directed to, and solely limited to, a balancer for ***balancing*** a rotating washing machine tub 18 rotating about a vertical axis of rotation, a field of endeavor that is non-analogous to and totally remote from the field of damping wind induced first harmonic mode pole vibrations *(Puckett Declaration, paragraph 24).*

Tatsumi *et al.* is also substantially different from the Hannah *et al.* device in that Tatsumi *et al.* employs a plurality of spherical weights 62 which are separated by participating walls 64 ***only when the device is deactivated*** and do not operate to separate the spherical weights while the device is operating to effect balancing *(Puckett Declaration, paragraph 25).* Also, weights 62 are immersed in lubricant and traveling in a ***horizontal*** plane. Weights 62 are made of ***elastic material*** (Column 6, lines 62-66) such as synthetic resin or natural rubber containing powdered lead oxide whereas Hannah *et al.* employs hardened balls made of metal such as lead positioned in "an appropriate lubricant" to "reduce the friction between the balls and their respective races or grooves" (Column 5, lines 64-69).

Tatsumi *et al.* also differs from Hannah *et al.* in that when the device is in a deactivated condition, spherical weights 62 rest on and are supported by horizontal floor portion 56D in an annular casing 58 in liquid lubricant W and are separated by panels or walls 64. Each wall 64 has an opening 66 through which the balls can, and do move, when the device is activated (See Column 7, lines 56-60). More specifically, upon

activation of the drive means for rotating tub 18, spherical weights 62 move up inclined wall portion 67 as the speed of the tub rotation increases. When the tub reaches operational speed the spherical weights move into alignment with opening 66 in wall 64, at which point the balls are positioned as shown in dashed line in Figure 6 and ***are no longer separated from each other by wall 64*** and are free to move through openings 66 and congregate in a 360° path inside vertical wall portion 69 as illustrated in Figure 3 and discussed in Column 7, lines 28-64 of Tatsumi *et al.* (*Puckett Declaration, paragraphs 25 and 26*). Therefore, the proposed modification of Hannah *et al.* to somehow incorporate panels 64 of Tatsumi *et al.* would render Hannah *et al.* ***inoperable*** for its intended purpose of balancing shaft 32, since it would preclude congregation of the contacting balls in a 360° circle, an essential aspect of the Hannah *et al.* device *(Puckett Declaration, paragraph 27).*

Kólya *et al.* U.S. Patent No. 4,655,317 is directed to the unrelated and completely remote art of noise reduction of a ***gas stream*** emitted by a blow-off valve and would not be a source of solutions to problems either in the damping of first harmonic mode wind induced structural vibrations of a vertical pole or the rotation balancing devices of Hannah *et al.* and Tatsumi *et al.* Noise is air pressure in wave form and is reduced by absorption not by the application of force as in damping *(Puckett Declaration, paragraphs 29 and 30).*

OBJECTION TO THE DRAWINGS UNDER 35 CFR § 1.83(A)

The objection to the drawings has been obviated by amendment of claim 34 as agreed to by Examiner Burch in a telephone conference with the applicant's undersigned attorney on March 13, 2006.

REJECTION UNDER 35 USC § 112

Paragraph 4 of the Office Action rejected claims 33 through 50 for lack of support in the specification with respect to the "stationary" limitation recited in claim 33 and the claim 34 recitation of the ball being capable of rolling a distance exceeding its radius and the claim 44 "ambient air" recitation. Claim 33 has been amended to delete "stationary" and claim 34 has been amended to delete "over a distance exceeding the radius of the spherical balls" as agreed to in the aforementioned telephone conference with Examiner Burch. Similarly, the claim 44 rejection has been obviated by deletion of "ambient air" from the claim.

REJECTION UNDER 35 USC § 103

Paragraph 6 of the Office Action rejected claims 33, 34, 35, 36, 37, 38, 41 through 47 and 50 under 35 USC § 103(a) as being unpatentable over Hannah *et al.* U.S. Patent No. 5,724,862 in view of Tatsumi *et al.* U.S. Patent No. 4,433,592. This rejection is, respectfully, but forcefully traversed, in that it is based upon misapprehension of both the prior art and controlling law and relies upon irrelevant and improper prior art that is not relevant to the damping field of the claimed invention and is based upon a manifestly improper interpretation procedure and unobvious reconstruction of Hannah *et al.*

The procedure employed in interpreting Hannah et al. from a horizontal viewpoint position "for examining purposes" is fundamentally flawed and does not conform to guidelines for interpreting prior art and results in an imaginary structure that is not taught or suggested by Hannah et al. and is not prior art.

The Office Action ignores the requirement that references must be interpreted to determine what they teach a person of skill in the art, but instead "for examining purposes", assumes a horizontal position parallel to "the direction of the shaft in Figure 8A of Hannah *et al.*" for viewing Figure 8A to create an imaginary structure in which horizontal structures, such as shaft 32, of Hannah *et al.* suddenly are perceived as being "vertical" so as to convert horizontal shaft 32 into a "vertical pole" as recited in claim 33 and its dependant claims.

The effect of the foregoing procedure is the creation of a non-existent fictional and imaginary version of Hannah *et al.* ***existing only in the Examiner's imagination***, a location ***not available*** to persons of skill in the art at the time of the invention, and which

is also different from, and not taught or suggested by, Hannah *et al.* The sole purpose of the Hannah *et al.* imaginary structure is to serve as a dummy for subsequent piecemeal reconstruction to incorporate planar panels 64 of Tatsumi *et al.* to create a structure referred to herein as a "Hannah *et al.*/Tatsumi *et al.* imaginary structure" that is asserted to constitute an anticipation of the structure recited in claim 33 of this application as well as the other claims.

The Examiner's horizontal ***perception*** of the imaginary Hannah *et al.* device resides solely in the Examiner's imagination and was not available for consideration by persons of skill in the art at the time of the invention and, therefore, it ***is not prior art*** and does not conform with what Hannah *et al.* actually discloses. The procedure is analogous to viewing a white rose through pink spectacles which creates the perception of a pink rose but does not change the actual color of the rose. Stated simply, the orientation of the observer is ***totally irrelevant*** and does not change the Hannah *et al.* structure or the orientation of its components in any manner. Viewing Hannah *et al.* from a horizontal or any other position ***does not result in any change in the structure itself*** and vertical structures continue to remain vertical (i.e., in the direction of earth gravitational force radial toward the center of the earth and generally orthogonal to the earth's surface *(Puckett Declaration, paragraph 3(b))*; horizontal members such as shaft 32 remain horizontal (i.e., in a plane orthogonal to vertical *(Puckett Declaration, paragraph 3(c))* as shown in the patent document and do not change in response to the viewer's orientation.

The assertion on page 11 of the Office Action that "vertical" and "horizontal" are "relative terms" is incorrect in that these words reflect specific ***unchangeable*** relationships to the earth *(Puckett Declaration, paragraph 31)* and any different usage such as describing shaft 32 of Hannah *et al.* as being "vertical" as proposed in the Office Action is unwarranted, inaccurate and improper, and, in conflict with the requirement that a reference is only good for what it clearly discloses.

This application is the sole genesis for the improper horizontal viewing position evaluation of Hannah et al.

There is nothing in the statute, the MPEP, Court Decisions or the Hannah *et al.* document that would have suggested to a person of ordinary skill in the art, at the time of the invention, the desirability of the horizontal viewer viewpoint for evaluation of Figure 8A of Hannah et al. It is consequently incontestable that motivation for such horizontal viewing of Hannah *et al.* ***is derived solely*** from this application and is consequently improper as a matter of law.

Viewing Figure 8A from a horizontal position is in effect an unwarranted and improper repositioning of the Figure 8A device of Hannah et al.

The positioning of the Examiner for horizontal viewing discussed on page 11 of the Office Action also simply amounts to a repositioning of the Figure 8A structure comprising a 90° rotation of the Figure 8A structure. Such repositioning is improper when, as here, it is not suggested by the prior art as was stated by the court in *In re Chu*, 66 F.3d 292, 36 USPQ2d 1089 (Fed. Cir. 1995):

> In a proper obviousness determination, "[w]hether the changes from the prior art are 'minor', . . . the changes must by evaluated in terms of the whole invention, including whether the prior art provides any teaching or suggestion to one of ordinary skill in the art to make the changes that would produce the patentee's . . . device." *Northern Telecom, Inc. v. Datapoint Corp.*, 908 F.2d 931, 935, 15 USPQ2d 1321, 1324 (Fed. Cir.), *cert. denied*, 498 U.S. 920 (1990). This includes what could be characterized as simple changes, as in *In re Gordon*, 733 F.2d 900, 902, 221 USPQ 1125, 1127 (Fed. Cir. 1984) (***Although a prior art device could have been turned upside down, that did not make the modification obvious unless the prior art fairly suggested the desirability of turning the device upside down***.). (Emphasis added)

As was noted in the response to the previous Office Action such a reorientation procedure requires that ***the reference itself*** must teach the resultant modified version of the device. In the similar case of *In re Gordon*, 221 USPQ, page 1125, the Court of Appeals, Federal Circuit, was faced with a rejection of claims based upon the Examiner's turning of a liquid strainer disclosed in French U.S. Patent No. 1,175,948 upside down in order to use the upside down device in rejection of application claims. The court held that such rejection was not proper, where, as here, (1) the reference itself did not teach the modified version of the device. The Court stated:

> "The question is not whether a patentable distinction is created by viewing a prior art apparatus from one direction and a claimed apparatus from another, but, rather, ***whether it would have been obvious from a fair reading of the prior art reference as a whole to turn the prior art apparatus upside down***. French teaches a liquid strainer which relies, at least in part, upon the assistance of gravity to separate undesired dirt and water from gasoline and other light oils. Therefore, it is not seen that French would have provided any motivation to one or ordinary skill in the art to employ the French apparatus in an upside down orientation. The mere fact that the prior art could be so modified would not have made the modification obvious ***unless the prior art suggested the desirability of the modification***. *See Carl Schenck, A.G. v. Nortron Corp.*, 713 F.2d 782, 787, 218 USPQ 698, 702 (Fed. Cir. 1983) and *In re Sernaker*, 702 F.2d 989, 995-96,

217 USPQ 1, 6-7 (Fed. Cir. 1983), both citing *In re Imperato*, 486 F.2d 585, 587, 179 USPQ 730, 732 (CCPA 1973)." (Emphasis added)

It is obvious that Hannah *et al.* does not teach or suggest the hypothetical 90° rotation of the patent's disclosed device.

The reorientation of the Hannah et al. structure constitutes a modification that does not conform with the criteria for establishing obviousness required by 2143 MPEP.

More specifically, the proposed rotation effected modification of Hannah *et al.* is not based on any prior art suggestion or motivation for which there is a reasonable expectation of success in damping wind induced first harmonic vibrations of a vertical pole and does not teach or suggest all of the claim limitations as required by 2143 MPEP which specifies:

> To establish a *prima facie case* of obviousness, three basic criteria must be met. First, there must be some suggestion or motivation, either in the references themselves or in the knowledge generally available to one of ordinary skill in the art, to modify the reference or to combine reference teachings. Second, there must be a reasonable expectation of success. Finally, the prior art reference (or references when combined) must teach or suggest all the claim limitations.
>
> The teaching or ***suggestion to make*** the claimed combination and ***the reasonable expectation of success must both be found in the prior art***, not in applicant's disclosure. *In re Vaeck*, 947 F.2d 488, 20 USPQ2d 1438 (Fed. Cir. 1991).

The fact that the non-existent Hannah *et al.* imaginary structure is not prior art prevents it from being a proper structure for modification based upon the teachings of Tatsumi *et al.* and Kólya *et al.* and the rejection of claims 33 through 50 should consequently be withdrawn and the claims allowed.

Hannah et al. and Tatsumi et al. are in the remote balancing art that is irrelevant to, and does not and cannot establish obviousness of, the claimed damping device invention.

Both Hannah *et al.* and Tatsumi *et al.* are in Class 74 and conform to balancing structures as defined in the following class definition:

> Mechanical combinations, contrivances, or devices constituting portions of machines, instruments and apparatus and consisting of two or more fixed and movable parts so combined that the motion of one compels a completely controlled or constrained motion of the other according to a law of operation inherent in and depending on the nature of the combination, and also the elemental parts of such machines not provided for in other machine element cases.

The remoteness of the claimed subject matter from the references is evident from the fact that none of the claims discloses or is directed to "two or more fixed and moveable parts so combined that the motion of one compels a completely controlled or restrained motion of the other according to a law of operation inherent in and depending on the nature of the contribution". Moreover, further evidence of the inappropriateness of Hannah *et al.* and Tatsumi *et al.* as being relevant prior art is evident from the fact that all of the rejected claims are unquestioningly directed to structure classified in Class 188, Subclass 378, the definition of which covers devices including "first and second relatively

movable members, wherein the second member includes a relatively heavy damping mass and the motion is restrained by an opposing force resulting from the inertia of the damping mass".

Further evidence of the lack of relevance of Hannah *et al.* and Tatsumi *et al.* is the fact that neither references discloses a device employing "first and second members" in which the second member "includes a relatively heavy damping mass" creating an opposing force "resulting from the inertia of the damping mass".

Hannah et al. and Tatsumi et al. neither singly or collectively teach any capability of damping wind induced pole vibrations.

It is additionally pointed out that even if Hannah *et al.* and Tatsumi *et al.* were relevant prior art, they operate to balance rotating structures and are not applicable to, or capable of, damping wind induced first harmonic mode vibrations of vertical poles. A person of skill in the art of pole vibration damping would not seek, and would not find, solutions for damping wind induced first harmonic mode pole vibrations in the non-analogous and unrelated rotation balancing field of both Hannah *et al.* and Tatsumi *et al.* *(Puckett Declaration, paragraph 14).*

The proposed modification of Hannah et al. to incorporate panels 64 from Tatsumi et al. would render Hannah et al. unsatisfactory for its intended purpose of balancing a rotating shaft and is consequently prohibited by 2143.01, Section V, MPEP

and controlling case law requirements for determining obviousness under 35 U.S.C. § 103.

An essential and necessary feature of the Hannah *et al.* Figure 8A device that is required for it to perform its balancing function is the positioning of balls in vertically extending 360° circular guide ways, illustrated by dashed lines, so that the balls are able to freely move along the 360° extent of the guide ways to permit the balls to congregate in contact with each other in essentially the same manner as balls 62 as illustrated in Figure 3 of Tatsumi *et al.,* to effect balancing of the Hannah *et al.* horizontal unbalanced shaft 32 *(Puckett Declaration, paragraph 12).* The proposed insertion of panels 64 of Tatsumi *et al.* in Hannah *et al.* would ***prevent*** such 360° movement of the spherical weights and cause Hannah *et al.* to be inoperable for its intended balancing purpose and would not make Hannah *et al.* capable of damping pole vibrations *(Puckett Declaration, paragraph 13).* Moreover, the proposed use of panels 64 to separate the balls of Hannah *et al.* during activation of the Hannah *et al.* device is contrary to their use in Tatsumi *et al.* in which the panels only separate balls 62 during ***deactivation*** of Tatsumi *et al. (Puckett Declaration, paragraph 25).*

The Office Action attempts to justify the modification of Hannah *et al.* to include wall 64 of Tatsumi *et al.* as being motivated "in order to provide means of allowing different damping capacities depending on the rotational speed of the apparatus" is flawed and contrary to 2143.01, Section I, MPEP in that the Tatsumi *et al.* prior art does not provide any motivation for achieving "different damping capacities". Moreover,

Hannah *et al.* ***does not effect damping*** *(Puckett Declaration, paragraph 11)* and there is consequently no damping capacity to be varied. It is also pointed out that the proposed modification to include wall 64 of Tatsumi *et al.* ***would not render*** Hannah *et al.* capable of providing a damping function and would actually render Hannah *et al.* ***inoperable*** for its intended purpose of balancing rotating shaft 32 *(Puckett Declaration, paragraphs 13 and 28).* It is well-settled that the mere fact that the prior art can be modified "should not have made the modification obvious unless the prior art suggested the desirability of the modification," and that ***a modification which would render the prior art apparatus inoperable for its intended purpose*** does not establish a prima facie case of obviousness. *In re Gordon*, 221 USPQ 1125, 1127 (Fed. Cir. 1984) (citing *In re Imperato*, 179 USPQ 730, 732 (CCPA 1973) and *In re Schulpen*, 157 USPQ 52, 55 (CCPA 1968)). Two references cannot properly be combined when to do so would destroy that on which the invention of one of the references is based. *Ex parte Hartmann*, 186 USPQ 366, 367 (Bd. App. 1974).

Tatsumi *et al.* also teaches away from the proposed modification of Hannah *et al.* to provide panels for separation of balls 62 in that Tatsumi *et al.* teaches that balls 62 are freely movable about a 360° path during use of the device at operational speed. It is abundantly clear that Tatsumi *et al.* ***teaches away from separation*** of the spherical balls during use of the device at operational speed for balancing tub 18 or in Hannah *et al.* *(Puckett Declaration, paragraph 26).*

Claim 33 patentably distinguishes over Hannah *et al.* (and the Hannah *et al.*/Tatsumi *et al.* imaginary balancing device) in reciting a pole vibration damping assembly "mountable on a vertical non-rotatable pole for damping wind induced first harmonic mode vibrations of the pole". Hannah *et al.* is not a damping device but is a balancing device *(Puckett Declaration, paragraph 11)*. Rotatable horizontal shaft 32 of Hannah *et al.* is not a vertical pole, is not non-rotatable, and is not subject to wind or wind induced first harmonic mode vibrations and does not even remotely include any structure or suggestion of usability for the damping of wind induced first harmonic mode vibrations *(Puckett Declaration, paragraph 16)*. The Tatsumi *et al.* device is not a pole vibration damping device and does not provide any teaching of modification of Hannah *et al.* that would enable the device of Hannah *et al.* to effect damping of wind induced first harmonic mode vibrations of a pole *(Puckett Declaration, paragraph 15)*.

Claim 33 further distinguishes over Hannah *et al.* in reciting "an annular housing including a horizontally oriented first housing component half-portion and a horizontally oriented second housing component half-portion horizontally aligned with the first housing component half-portion". Sections 90 and 91 of the Figure 8A Hannah *et al.* apparatus are not horizontal and are not horizontally aligned as required by the above quoted claim language *(Puckett Declaration, paragraph 12)*.

Claim 33 additionally distinguishes over Hannah *et al.* in reciting "connections connecting the first housing component half-portion to the second housing component half-portion". Since Hannah *et al.* does not have the first and second horizontally

oriented and aligned housing component half-portions as noted in the preceding paragraph, there is no disclosure in Hannah *et al.* of connections for connecting such half-portion housing components.

Claim 33 also distinguishes over Hannah *et al.* in reciting "each housing component half-portion including an inner partial cylinder sleeve having an inner partial cylinder sleeve surface having a lower end portion, a vertical center of curvature and being dimensioned and shaped to fit in a mating manner over, and in facing contact with, an upper end portion of a vertical non-rotatable pole and having an axis approximately coextensive with the center of curvature of the pole". Hannah *et al.* does not have any housing component half portions *(Puckett Declaration, paragraph 17)* and shaft 32 does not conform with the ordinary and accustomed meaning of "pole" and is not a pole *(Puckett Declaration, paragraph 8)* .

Claim 33 further distinguishes over Hannah *et al.* in reciting "an outer partial cylinder sleeve positioned outwardly of the inner partial cylinder sleeve surface and having a lower end termination portion and a vertical center of curvature that is coextensive with the center of curvature of the inner partial cylinder sleeve surface". The failure of Hannah *et al.* to disclose the "inner partial cylinder sleeve" as noted above in the preceding paragraph, clearly precludes the existence of an outer panel sleeve "positioned outwardly of the inner partial cylinder sleeve" *(Puckett Declaration, paragraph 18).*

Claim 33 provides further distinction over Hannah *et al.* in additionally reciting "a floor panel extending between lower portions of the inner partial cylinder sleeve surface and the outer partial cylinder sleeve". Hannah *et al.* does not have a floor panel *(Puckett Declaration, paragraph 19)*. Since Hannah *et al.* does not have an inner partial cylinder sleeve surface and an outer partial cylinder sleeve surface as noted above, it consequently cannot have a floor panel connected to the such non-disclosed inner partial cylinder plane surface and the non-disclosed outer partial cylinder sleeve surface.

Claim 33 further distinguishes over Hannah *et al.* in additionally reciting "a plurality of vertical partitioning panels extending vertically upward from the floor panel and extending between the inner partial cylinder sleeve and the outer partial cylinder sleeve to define non-circular damping weight receiving chambers between adjacent partitioning panels". Since Hannah *et al.* does not disclose a floor panel, an inner partial cylinder sleeve, and an outer partial cylinder sleeve, it clearly cannot disclose a plurality of vertical partitioning panels extending upwardly from a non-disclosed floor panel and between a non-existent inner partial cylinder sleeve and a non-disclosed outer partial cylinder sleeve *(Puckett Declaration, paragraph 20)*.

Claim 33 adds additional distinction over Hannah *et al.* in reciting "a movable damping weight supported by the floor panel for horizontal rolling movement in each of the damping weight receiving chambers". The failure of Hannah *et al.* to disclose a floor panel clearly precludes the claimed provision of a moveable damping weight supported by such non-disclosed floor panel *(Puckett Declaration, paragraph 21)*.

Claim 34 should be allowed for the same reasons as claim 33 as discussed above. Additionally, claim 34 further distinguishes over Hannah *et al.* in providing that the damping weights "are spherical balls and the shape and dimensions of the damping weight receiving chambers are sufficient to permit rolling movement in any direction of the spherical balls in the respective damping chamber in which each spherical ball is positioned". It was agreed, during the aforementioned telephone conference with Examiner Burch, that the afore quoted language distinguishes over Hannah *et al.*

Claim 35 depends from claim 34 and should be allowed for the same reasons as claim 34 as discussed above. Moreover, claim 35 further distinguishes over Hannah *et al.* in specifying that the damping weights are spherical balls and the partitioning panels are connected to the inner partial cylinder sleeve and the outer partial cylinder sleeve. The failure of Hannah *et al.* to disclose an inner partial cylinder sleeve and an outer partial cylinder sleeve as noted previously precludes disclosure by Hannah *et al.* of partitioning panels connected to such sleeves *(Puckett Declaration, paragraph 22)*.

The rejection of claims 35, 36, 46 and 47 in the second paragraph on page 7 of the Office Action is forcefully traversed in that it is based upon an erroneous reliance upon *In re Leshin*, 125 USPQ 416 for the incorrect proposition that the selection of a known material by a person of skill in the art "on the basis of its suitability for the intended use as a matter of obvious design choice" is all that is necessary to make use of the known material obvious under 35 U.S.C. § 103. However, in actuality *Leshin* and other authority require that a ***reference*** must teach such suitability for a particular intended use.

It appears that the Examiner is improperly relying upon the misleading first headnote *In re Leshin* which reads:

> "Mere selection of known plastics to make container-dispenser of a type made of plastics prior to the invention, the selection of the plastics being on basis of suitability for intended use, is obvious."

In actuality, the ***relevant portion*** of the Court's decision *In re Leshin* on page 417 demonstrates reliance upon the Anderson prior art reference in stating:

> "As to those claims limited to plastic, dependent claims 14 and 15, ***Anderson shows*** a similar container of molded plastic and applicant concedes that the plastics he uses are well known, "but," he says, "applicant has had to select them for his particular purpose." Mere selection of known plastics to make a container-dispenser of a type made of plastics prior to the invention, the selection of the plastics being on the basis suitability for the intended use, would be entirely obvious." *(Underlining added)*

Thus, the Court specifically relied upon the Anderson patent's teaching of the use of plastic in a device similar to the claimed devices. There is ***no mention*** of such selection being "a matter of obvious design choice" not requiring a reference as suggested in the Office Action and there is noting which suggests that the absence, such as here, of a ***reference*** disclosing a particular material's use would be acceptable.

In order for a prima facie case of obviousness to be established, the ***applied prior art*** must be such that it would have provided one of ordinary skill in the art with both a motivation to carry out the claimed invention and a reasonable expectation of success in doing so. In the present case there is ***no prior art*** which makes the use of metal or lead balls or polyurethane covered balls in Hannah *et al.* obvious and/or successful. See *In re*

Vaeck, 947 F. 2nd 488, 493, 20 USPO 2ND 1438, 1442 (Fed. Cir. 1991); In re O'Farrell 853 F. 2nd 894, 902 7 USPO 2nd 1673, 1680 (Fed. Cir. 1988).

Claim 36 depends from claim 33 and should be allowed for the same reasons as claim 33 as noted above. Claim 36 further distinguishes over the prior art in providing that the damping weights are spherical lead balls.

Claim 37 depends from claim 33 and should be allowed for the same reasons as claim 33 as noted above. Moreover, claim 37 further distinguishes over the prior art in providing that the partitioning panels are planar panels.

Claim 38 depends from claim 33 and should be allowed for the same reasons as claim 33 as noted above. Claim 38 additionally distinguishes over the prior art in reciting that the partitioning panels are planar panels oriented in substantially perpendicular manner relative to the floor panel in that there is no floor panel in Hannah et al. and Hannah *et al.* does not disclose partitioning panels *(Puckett Declaration, paragraph 19).*

Claim 39 depends from claim 33 and should be allowed for the same reasons as claim 33 as noted above. Additionally, claim 39 further distinguishes over the prior art in reciting that the damping weights are plastic coated spherical metal balls.

Claim 40 depends from claim 33 and should be allowed for the same reasons as claim 33 as noted above. Additionally, claim 40 further distinguishes over the prior art in providing that the damping weights are plastic coated spherical metal balls that are coated with polyurethane.

Claim 41 depends from claim 33 and should be allowed for the same reasons as claim 33 as noted above. It is additionally pointed out that claim 41 further distinguishes over Hannah *et al.* in providing that the first housing component half-portion and the second housing component half-portion are fixedly connected together to cooperatively encircle the pole, and that each housing component half-portion includes a first planar panel extending between a first end portion of the inner partial-cylinder sleeve and a connector lug comprising part of the connection on a first end portion of the outer partial-cylinder sleeve. Hannah *et al.* does not disclose a first housing component half-portion and a second housing component half-portion as noted above with respect to claim 33. The absence of the first and second housing component half-portions obviously prevents Hannah *et al.* from having a "first planar panel" and a "connector lug", etc. as recited in claim 41.

Claim 42 depends from claim 41 and should be allowed for the same reasons as claim 41 as noted above. Moreover, claim 42 additionally distinguishes the over the prior art in specifying the damping weights are spherical metal balls.

Claim 43 depends from claim 41 and should be allowable for the same reasons as claim 41. In addition, claim 43 provides further distinction over the prior art in specifying that the damping weights are spherical lead balls.

Paragraph 7 of the Office Action rejects claims 39, 40, 48 and 49 under 35 USC § 103(a) as being unpatentable over Hannah *et al.* in view of Tatsumi *et al.* as applied to claims 33 etc. and further in view of Kólya *et al.* U.S. Patent No. 4,655,317. This rejection is respectfully, but forcefully, traversed.

The comments made above with respect to claim 33 concerning the improper interpretation of Hannah *et al.* for "examining purposes" and the inadequacies of Hannah *et al.* and Tatsumi *et al.* are equally applicable to claims 39, 40, 48 and 49 and are respectfully referred to.

The first complete paragraph beginning on page 11 of the Office Action accurately notes that a prior art reference must either be in the field of applicant's endeavor or, if not, then be reasonably pertinent to the particular client problem which the applicant was concerned in order to be relied upon as a basis for rejection of the claimed invention. The Office Action then inaccurately argues that "Kólya *et al.* is reasonably pertinent to the particular problem with which Applicant is concerned" because "Kólya *et al.* is concerned with providing a coating on balls to insulate sound, a form of vibration, similar to the way in which Applicant is concerned with coating balls to damp wind vibration" which is apparently intended to suggest that Kólya *et al.* is pertinent to the same problem as Applicant's; however, there is no such pertinence *(Puckett Declaration, paragraphs 29 and 30)*. It is pointed out that Kólya *et al.* is in the field of ***suppression of the noise generated by a gas stream emitted by a blow-off valve***, a field that is totally different from and irrelevant to the rotary device balancing field of Hannah *et al.* and

Tatsumi *et al.* and the present invention field of damping first harmonic mode wind induced pole vibrations. Thus, Kólya *et al.* is not even remotely pertinent to either of the references or the claimed invention. Moreover, Kólya *et al.* does not disclose a sphere but only discloses a partial sphere which is not capable of rolling movement in the manner of the sphere of Hannah *et al.* Sound vibration is gas vibration and wind induced pole vibration is structural vibration. They are ***two totally different forms*** of vibration that are not relevant to each other and are controlled by totally different procedures *(Puckett Declaration, paragraphs 29 and 30).*

A person of skill in the rotating shaft balancing art of Hannah *et al.* would not seek solutions to problems in the field of gas stream generated noise reduction art of Kólya *et al.* which merely teaches sound absorption by polyurethane partial sphere 14 *(Puckett Declaration, paragraph 29).* Kólya *et al.* only discloses a noise-damping device in which a metal fitting member 2 is inserted and an aperture in a ***partial*** polyurethane sphere 14 having a polyurethane pre-polymer solution coating outer layer 15 *(Puckett Declaration, paragraph 29).* Thus, Kólya *et al.* does not teach or suggest the employment of a polyurethane coating on either a sphere, a metal sphere or a rolling metal sphere in the balancing device of Hannah *et al.*

It is also noted that the statement on page 7 of the Office Action indicating that Hannah *et al.* "is silent with regards to specific material of the balls" is inaccurate in that column 2, lines 54 through 65 of Hannah *et al.* read as follows:

> "It has been found that, with other factors being equal, balls made from a denser material will respond faster to imbalance than lighter balls. This faster response of the weights or balls may be implemented by manufacturing the movable weights from a material such as carbide material, which is denser than the density of known steel material. It is also noted that earlier movement of the balls can result if the weights are made of hard material and are therefore able to move more freely. Likewise, it is noted that earlier movement of the weights or balls can be achieved if the races in which the weights move are of a relatively hard material."

The above quote from Hannah *et al.* presents a clear teaching away from the use of Kólya *et al's.* relatively soft polyurethane balls by indicating the desirability of making the balls from a material such as carbide material which is denser than the density of known steel material and also emphasizes the desirability of employing ***relative hard material*** for the balls. ***Polyurethane is neither hard nor is it dense***. Thus, it is abundantly clear that the balls of Hannah *et al.* are totally different from and exceedingly harder than the polyurethane partial sphere 14 of Kólya *et al.* It follows that the provision of a soft coating such as polyurethane on the balls of Hannah *et al.* would be totally ***contrary to the teachings of Hannah et al.*** with respect to the requirement of having a hardened material forming the balls to avoid the formation of "flats" resultant from wear on the balls.

It is also clear that Hannah *et al.* makes it abundantly clear that a hard ball material is essential and that a worker having general skill in the Hannah *et al.* art would be advised of the fact that polyurethane ***would not provide*** the "suitability for the intended use" required by the *Leshin* case.

Therefore, the rejection of claims 39, 40, 48 and 40 should be withdrawn and these claims should be allowed.

Claim 44 distinguishes over Hannah *et al.* and the Hannah *et al.*/Tatsumi *et al.* imaginary structure in reciting a vibration damping device "mountable on a non-rotatable vertical pole for damping wind induced first harmonic mode vibrations" in that Hannah *et al.*/Tatsumi *et al.* is totally unrelated to and not capable of damping such vibrations *(Puckett Declaration, paragraphs 11, 12, 13, 14 and 15)* as discussed above with respect to claim 33. Additionally, further distinction over Hannah *et al.* is provided by the recitation of a housing mountable on such a pole and including "an annular horizontally aligned array of weight receiving chambers solely occupied by a spherical ball damping weight and wherein the housing is shaped and dimensioned to encircle and facingly engage such a pole to effect mounting of the device on the pole" *(Puckett Declaration, paragraph 17)*. Further distinction is provided by the recital that the horizontally aligned weight receiving chambers "are separated by planar panels preventing movement of the spherical ball damping weights from one weight receiving chamber to an adjacent weight receiving chamber" *(Puckett Declaration, paragraph 10)*.

Claim 45 should be allowable for the same reasons as claim 44 as noted above. Additionally, claim 45 further distinguishes over the Hannah *et al.* reference in providing for the spherical ball damping weights being "freely rollable in any horizontal direction in their respective weight receiving chamber".

Claim 46 should be allowable for the same reasons as claim 44 as noted above. Additionally, claim 46 further distinguishes over the prior art in specifying that the damping weights are spherical metal balls.

Claim 47 depends from claim 44 and should be allowed for the same reasons as claim 44 as noted above. Additional distinction over the prior art is provided by the recitation that the damping weights are "spherical lead balls".

Claim 48 depends from claim 44 and should be allowed for the same reasons as claim 44. Additionally, further distinction over the prior art is provided by the further indication that the damping weights "are plastic coated spherical metal balls".

Claim 49 depends from claim 48 and should be allowed for the same reasons as claim 48 as noted above. Additionally, further distinction over the prior art is provided by the recitation that the plastic ball coating is polyurethane.

Claim 50 depends from claim 44 and should be allowed for the same reasons as claim 44 as noted above and additionally by indication that the weight receiving chambers are non-circular.

CONCLUSION

All formal matters have been complied with and the claims remaining in the application are directed to allowable subject-matter for the reasons noted above.

Passage of this application to issue is therefore urged to be in order and is earnestly solicited.

Respectfully submitted,

JACOBSON HOLMAN PLLC

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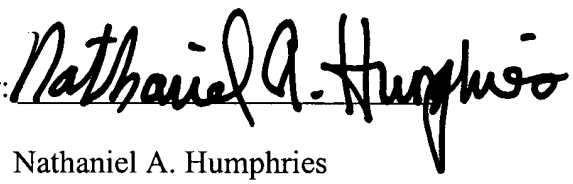
By: 

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